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# THE SMALL WATERSHED PROGRAM

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U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
JULY 1972

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## THE WATERSHED PROTECTION AND FLOOD PREVENTION PROGRAM

The Watershed Protection and Flood Prevention Act (Public Law 566) was passed by Congress in 1954. This Act followed by one year the authorization by Congress of work on approximately 60 small watersheds to serve as demonstration or "pilot" projects. Two of these pilot projects are in New Mexico. Construction of both projects has been completed.

The Watershed Protection and Flood Prevention Act provides authority to the Secretary of Agriculture to give technical, financial and credit assistance to local organizations in planning and carrying out watershed projects. Within the Department of Agriculture, this program is administered by the Soil Conservation Service. In New Mexico, the State Engineer's Office has been designated by the Governor as the State Agency responsible for this program.

All applications for watershed projects are submitted to the State Engineer and must be approved by him prior to acceptance by the Soil Conservation Service. The State Engineer also determines the priority of application to receive planning assistance, reviews and approves the project work plan, and issues construction permits for necessary structural works.

The Act provides for a project type approach to soil and water resource development, use, and conservation. Initiative and control is in the hands of local organizations composed of people within the watershed area. Applications may be submitted for a watershed project by local organizations having authority under State law to construct, maintain, and operate works of improvement. Two or more local organizations having authority to combine under State law may carry out these project responsibilities. As a prerequisite to planning, at least one of the sponsoring organizations must have the powers of taxation and eminent domain.

To facilitate the watershed program in areas where there are no local organizations with the necessary power, the New Mexico State Legislature passed the Watershed District Act (House Bill 161) in 1957. This Act authorized procedures for establishing watershed districts to carry out the required local responsibilities in connection with works of improvement for watershed protection and flood prevention.

Each watershed project will provide for proper land use and treatment as well as other purposes such as flood prevention, irrigation, drainage, fish and wildlife development, municipal water supply, or other phases of water management. Needed land treatment measures must be included in the project. The objectives of the local organization are a factor in planning for other works of improvement.



## LOCAL RESPONSIBILITIES

Since the watershed projects are local in nature, public assistance is provided to help the local people carry out projects requiring group action beyond their individual capabilities. To be eligible for this assistance, the local people and their organizations are responsible for the following actions:

1. Inform local people of the program to insure that concerned land-owners understand the need and opportunities under the program and that local people will provide support for the project.
2. Prepare and submit the application for assistance. Leadership in preparing and submitting the application is usually provided by the supervisors of the local soil and water conservation district.
3. Take the lead in developing a plan for the project with assistance from the Soil Conservation Service and other appropriate agencies.
4. Provide land, easements and rights-of-way for all structural works of improvement.
5. Plan and establish conservation measures on private land. At least 50% of the land area above each structure must be under the conservation agreement with the local soil and water conservation districts.
6. Provide contractual services during construction unless they request this done by the Soil Conservation Service.
7. Pay the allocated share of costs for measures for agricultural water management, fish and wildlife development, and recreation.
8. Provide all necessary water rights and permits to store water where applicable.
9. Operate and maintain all structures built as part of the project and maintain conservation measures installed on private land.
10. Pay all of the cost of water storage allocated to municipal and industrial use.

## FEDERAL RESPONSIBILITIES

1. The Soil Conservation Service pays all construction and installation costs chargeable to flood prevention.
2. The Soil Conservation Service pays the allocated share of construction costs and provides all necessary installation services such as detailed plans and designs, and supervision of construction for measures for agricultural water management, fish and wildlife development, and recreation.

3. Provide contractual services during construction, if requested to do so by the sponsoring local organization.
4. For measures for recreation, in addition to providing 50% of the construction cost and all installation services, the Soil Conservation Service may pay a share of the cost for easements and rights-of-way, access roads, and minimum basic facilities.
5. Through soil conservation districts, provides technical assistance in conservation farm planning and application, and in maintenance of land treatment and structural measures.
6. Loans are available to qualified local organizations through the Farmers Home Administration to carry out watershed project purposes.

## PROGRESS IN THE WATERSHED PROGRAM IN NEW MEXICO

The farmers, ranchers, communities, towns, villages, counties, State agencies, and special purpose districts of New Mexico have recognized the Small Watershed Program as a means of solving many of their problems of conservation, watershed protection, and flood prevention. On June 30, 1972, a total of 86 applications covering 8,472,974 acres had been received and approved by the New Mexico State Engineer. As of that date, 42 watersheds have been authorized for work plan development, 24 have been authorized for construction, and 16 projects have been completed.

Applications have been submitted on watershed projects in 26 of the 32 counties in New Mexico. Out of the 51 soil and water conservation districts in the state, 37 have sponsored watershed applications. Other sponsors include towns and cities, county commissions, irrigation districts, conservancy districts, watershed districts, State agencies, and Indian Tribal Councils.

Since 1963, the State of New Mexico provided funds through State Agencies to accelerate watershed project planning within the State. The International Boundary and Water Commission has also provided funds to the Soil Conservation Service for work plan development on selected watersheds in Dona Ana and Sierra Counties. The additional funds from these two sources have accelerated the development rate for watershed work plans in New Mexico. It is beginning to have a significant effect on the number of projects authorized for construction. During fiscal year 1972, assistance in work plan development was provided on 8 watershed applications.

The priority of watersheds to receive assistance in work plan development is determined jointly by the New Mexico State Engineer and the State Soil and Water Conservation Committee. The State Soil and Water Conservation Committee acts as an advisor to the State Engineer in determining priorities for planning. The priority recommendations are based on consideration of all remaining watershed applications that meet the requirements of the law and the policy of the Department of Agriculture. Significant factors include economic and physical feasibility of the project, the amount of

needed land treatment measures which have been installed on the land, the interest of the local people and their willingness and ability to assume their responsibilities, the extent to which the proposed project meets all of the needs of the watershed, and the number of landowners benefited. In addition to conservation land use and treatment, all watershed projects must have either flood prevention or agricultural water management as a primary project purpose. Projects cannot be approved for planning unless at least one of the sponsoring local organizations has the power of eminent domain and agrees to use the powers to carry out local responsibilities under the watershed program.

Many benefits are realized whenever a watershed protection and development project is initiated and installed through the PL-566 program. In addition to the primary benefits of flood prevention and other purposes, there are many community development or secondary benefits.

In New Mexico, 16 watersheds have been completed to date. The total accumulated benefits of these 16 projects are estimated to be \$2,285,782. The total accumulated average annual cost of achieving these benefits is approximately \$1,792,200. Overall, the percent of reduction of average annual damages by these projects range principally from 79 to 98 percent. The total average annual benefits for these projects are \$261,266. The total average annual benefits for the eight projects approved for operation but not completed are \$1,177,026.

The total sediment storage in the 16 completed projects is 5,468 acre-feet. These structures have accumulated approximately 1,105 acre-feet of sediment at the present time. The total sediment storage in the eight projects which are approved for operations which have not been completed is equal to 13,402 acre-feet.

## ZUNI PUEBLO WATERSHED

The Zuni Pueblo Watershed is one of the eight watersheds which received assistance for work plan development. An application for assistance in developing the watershed under Public Law 566 was submitted by the sponsors in July, 1969.

The objectives of the sponsoring local organizations are (1) to develop land treatment systems for the protection of the watershed, and (2) to reduce floodwater and sediment damages to the agricultural and urban property.

The development of the watershed along with control of the floodwater and sediment that inundate and damage most of the irrigated agricultural land of the Zuni irrigation unit and the urban area of the Pueblo of Zuni is included in the priority items in the comprehensive development plan for the Zuni Reservation. Watershed protection and flood prevention is a mandatory prerequisite to many of the other developments and improvements for the Pueblo of Zuni and the irrigated agricultural lands.



Priority for planning was being delayed indefinitely due to limited planning resources and to the present on going watershed planning activities.

The Governor of the Pueblo of Zuni initiated meetings and negotiations with the necessary state and federal agencies to develop a proposal for funding which was approved by the Four Corners Regional Commission. In the proposal, the Pueblo provided \$6,000, the Bureau of Indian Affairs provided \$9,300 for surveys and personnel and the Four Corners Commission provided \$12,200 for the development of the work plan under the supervision of the Soil Conservation Service. These funds and resources made it possible to accelerate planning and complete the first draft of the work plan by June, 1972, which otherwise may have been delayed several years.

The structural measures included in this plan consist of one floodwater retarding structure with associated outlet works. The total estimated cost of structural measures is \$3,758,690; with \$3,747,090 being PL-566 costs. The structure has 4,736 acre-feet of storage capacity. Of this total, 3,913 acre-feet is for the anticipated 100 year sediment volume and 823 acre-feet is for detention storage to retard the 100 year storm runoff.

The sponsors for the project include: Pueblo of Zuni, McKinley County Soil and Water Conservation District and the Northwest New Mexico Resource, Conservation and Development.

STATUS OF PL-566 ACTIVITIES IN NEW MEXICO

as of July, 1972  
1. PROJECTS COMPLETED

No. <sup>1/</sup>	WATERSHED	COUNTY	AREA (ACRES)	APPL. APPR. BY ST. ENGR.	AUTH. FOR PLNG.	WORK PLAN COMPL.	APPR. FOR INST- ALLN.	PROJ. CONST. COMPL.	FEDERAL <sup>2/</sup> PROJECT COST (DOLLARS)	NON-FEDERAL <sup>2/</sup> PROJECT COST (DOLLARS)	REMARKS
3	Dona Ana Arroyos	Dona Ana	6,950	1-55	7-55	4-56	7-56	2-58	115,195	51,672	
1	Hatch Valley Arroyos	Sierra- Dona Ana	14,521	11-54	1-55	10-55	6-56	9-58	137,261	47,724	
31	Caballo Arroyos	Sierra- Dona Ana	7,680	12-57	1-58	5-58	5-58	9-60	280,293	6,150	
2	Upper Rio Penasco	Otero	128,000	11-54	7-55	5-57	6-57	11-60	313,437	45,300	
4	Zuber Draw	Chaves	115,840	2-56	2-56	10-57	3-58	11-60	365,196	158,492	
13	Tamperos Creek	Union- Harding	136,320	5-55	3-56	4-58	7-58	3-61	338,355	148,994	
24	Prop Canyon & Tributaries	Valencia	19,162	3-57	6-57	10-58	10-58	9-61	191,123	26,725	
6	Santa Cruz River (Reopened 1970)	Rio Arriba- Mora-Santa Fe	117,180	1-55	10-56	4-59	8-59	9-62	498,198	24,025	
33	Fillmore Arroyos	Dona Ana	18,500	4-58	10-59	3-61	3-61	10-62	926,500	13,500	
27	Tortugas Arroyos	Dona Ana	16,256	10-57	2-59	10-59	4-61	11-62	272,711	7,310	
29	Upper Gila Valley No. 1	Grant	27,000	7-57	9-58	3-60	8-60	3-63	332,141	10,500	
7	Salt Peter Creek	Colfax	32,320	1-55	6-57	4-59	4-59	6-64	340,972	12,490	
15	Pecos Arroyo	San Miguel	47,808	9-56	6-57	4-59	6-59	6-65	209,441	48,240	
38	Apache-Brazito- Mesquite	Dona Ana	33,630	11-58	12-61	11-62	5-63	10-65	118,855	23,190	
45	Hackberry Draw	Eddy	12,800	9-59	4-61	4-62	6-62	6-68	643,857	289,404	
43	Cass Draw	Eddy	32,000	9-59	12-61	4-64	5-65	4-70	283,682	36,650	
TOTAL: Projects - 16									\$4,713,908	\$1,010,523	

1/ Number assigned by SCS  
2/ Work Plan Estimates

## 2. PROJECTS IN OPERATIONS

No. <sup>1/</sup>	WATERSHED	COUNTY	AREA (ACRES)	APPL. APPR. BY ST. ENGR.	AUTH. FOR PLNG.	WORK PLAN COMPL.	APPR. FOR INST- ALLN.	PROJ. CONST. COMPL.	FEDERAL <sup>2/</sup> PROJECT COST (DOLLARS)	NON-FEDERAL <sup>2/</sup> PROJECT COST (DOLLARS)	REMARKS
44	Avalon-Alacron	Eddy	8,640	9-59	12-61	6-64	8-64	-	91,720	28,528	
40	Anthony Arroyo	Dona Ana	4,032	6-62	1-63	4-65	5-65	-	671,300	26,365	
56	Crow, Broad & Placitas	Dona Ana- Sierra	137,932	6-62	6-64	1-66	8-66	-	4,253,500	105,683	
47	Sebastian Martin- Black Mesa	Rio Arriba	103,040	11-59	8-63	5-68	12-69	-	3,270,011	28,835	
54	Corrales	Bernalillo Sandova1	54,720	11-61	11-63	9-68	5-70	-	2,495,474	156,239	
64	Sibley, Green, Jaramosa & Candler Arroyos	Dona Ana Sierra	120,876	3-63	2-64	4-68	8-69	-	3,347,214	20,100	
57	Tucumcari Draw	Quay	10,780	7-62	10-64	1-69	6-70	-	1,689,567	412,629	
55	Running Water Draw 3/	Curry	126,000	6-62	1-65	11-68	5-70	-	321,884	198,058	
TOTAL: Projects - 8			566,020						16,140,670	976,437	

<sup>1/</sup> Number assigned by SCS

<sup>2/</sup> Work Plan Estimates

<sup>3/</sup> Administrative responsibility with other state





4. WORK PLAN PREPARATION DISCONTINUED

<u>NO.</u> <u>1/</u>	<u>WATERSHED</u>	<u>COUNTY</u>	<u>AREA</u> <u>(ACRES)</u>	<u>APPLICATION</u> <u>APPROVED BY</u> <u>STATE ENGINEER</u>	<u>AUTHORIZED</u> <u>FOR PLANNING</u>	<u>DATE DISCONTINUED</u>	<u>REMARKS</u>
39	Lauson-Breedlove	Dona Ana	6,935	12-58	4-63	11-71	Terminated
36	Lemitar-Polvadera	Socorro	30,980	6-58	10-59	9-61	Terminated- included in new application for Midway Watershed
10	Bloomfield Arroyo	San Juan	9,200	4-60	11-60	1-63	Terminated
17	Upper Dry Cimarron	Union Colfax	113,800	11-56	9-56	9-61	Suspended
16	North Dry Cimarron	Union,NM Las Animas,CO	242,260	1-57	12-59	9-61	Suspended
14	South Dry Cimarron	Union	212,244	3-56	12-59	9-61	Suspended
5	Pojoaque Creek	Santa Fe	157,220	1-55	10-56	2-61	Terminated
50	Eagle Creek	Otero-Lincoln	36,742	6-60	4-63	1-65	Terminated-has been combined with No. 80
25	Upper Frisco	Catron	195,640	5-57	5-62	3-66	Terminated

TOTAL: Projects - 9                      1,005,021

1/ Number assigned by SCS

# 5. PROJECTS WITH PRELIMINARY INVESTIGATION COMPLETE

## PROJECTS CONSIDERED FEASIBLE

NO. 1/	WATERSHED	COUNTY	AREA (ACRES)	APPLICATION APPROVED BY STATE ENGINEER	INVESTIGATION REPORT	REMARKS
76	Rio San Jose	Valencia McKinley	205,015	5-65	1-72	
30	Upper Mora River	Mora	121,882	10-57	6-64	
75	Silver City	Grant	18,600	4-65	6-68	
34	San Mateo-Grants Canyon	McKinley Valencia	205,000	5-58	1-72	
41	Central Lea	Lea-Chaves	237,363	1-59	6-65	
42	Gary-Winder-Haynor	Dona Ana	3,870	3-59	3-63	
48	Parjarito Arroyos	Bernalillo	11,200	2-60	7-62	
49	Ojo Caliente	McKinley Valencia	30,410	2-60	12-64	Feasible for agricultural water manage
53	Upper Valley Arroyos	Dona Ana Sierra	10,940	10-61	3-63	
60	Embudo Creek	Taos Rio Arriba	204,770	1-63	6-64	
63	Pole-Zuni Canyons	Valencia	67,000	2-63	1-72	
65	Little Rio Grande	Taos	128,038	4-63	6-64	Feasible for agricultural water manage
79	Hampton, Aztec, School, Williams & Estes Arroyos	San Juan	144,656	12-65	4-69	
81	Gallinas River	San Miguel	198,669	2-67	8-68	
83	Rito Leche Nacimiento	Rio Arriba Sandoval	9,878	6-69	7-69	
TOTAL: Projects - 15			1,597,291			

1/ Number assigned by SCS

6. PROJECTS WITH PRELIMINARY INVESTIGATION COMPLETE

PROJECTS CONSIDERED NOT FEASIBLE AT PRESENT

NO. <sup>1/</sup>	WATERSHED	COUNTY	AREA (ACRES)	APPLICATION APPROVED BY		INVESTIGATION REPORT	REMARKS
				STATE	ENGINEER		
99	North Spring River	Chaves	26,189	10-60		3-62	Corps of Engineers Project
11	Middle Rio Penasco	Otero-Chaves	241,690	3-55		2-62	
22	Carrizo Creek	Union-Colfax	250,000	2-57		8-63	
46	Alamo Canyon	Lincoln-Otero	35,674	11-59		5-62	
80	Ruidoso	Lincoln-Otero	169,400	5-67		12-68	
82	Viriden-Duncan Valley	Greenlee-Cochise,AZ Hidalgo-Grants,NM	241,000	7-68		4-70	
61	Carrizo Creek	Otero	16,300	1-63		10-63	Application withdrawn-combined with No. 80
58	Taos Creek	Taos	56,600	11-62		10-63	Application withdrawn 11-64
71	Chico Rico	Colfax,NM Las Animas, CO	234,038	4-63		4-71	
87	Midway	Socorro	67,000	5-71		7-72	Includes No. 36-Lemitar-Polvadera
23	Avillar Arroyos	Dona Ana	20,344	6-71		2-72	
32	Leasburg Arroyos	Dona Ana	12,270	4-58		3-64	Combined with No. 23
59	La Union Arroyos	Dona Ana	92,973	12-62		3-72	
78	San Miguel Arroyos	Dona Ana	92,000	11-65		2-72	
TOTAL: Projects - 14			1,488,478				

<sup>1/</sup> Number assigned by SCS

# 7. PROJECTS NEEDING FEASIBILITY INVESTIGATION

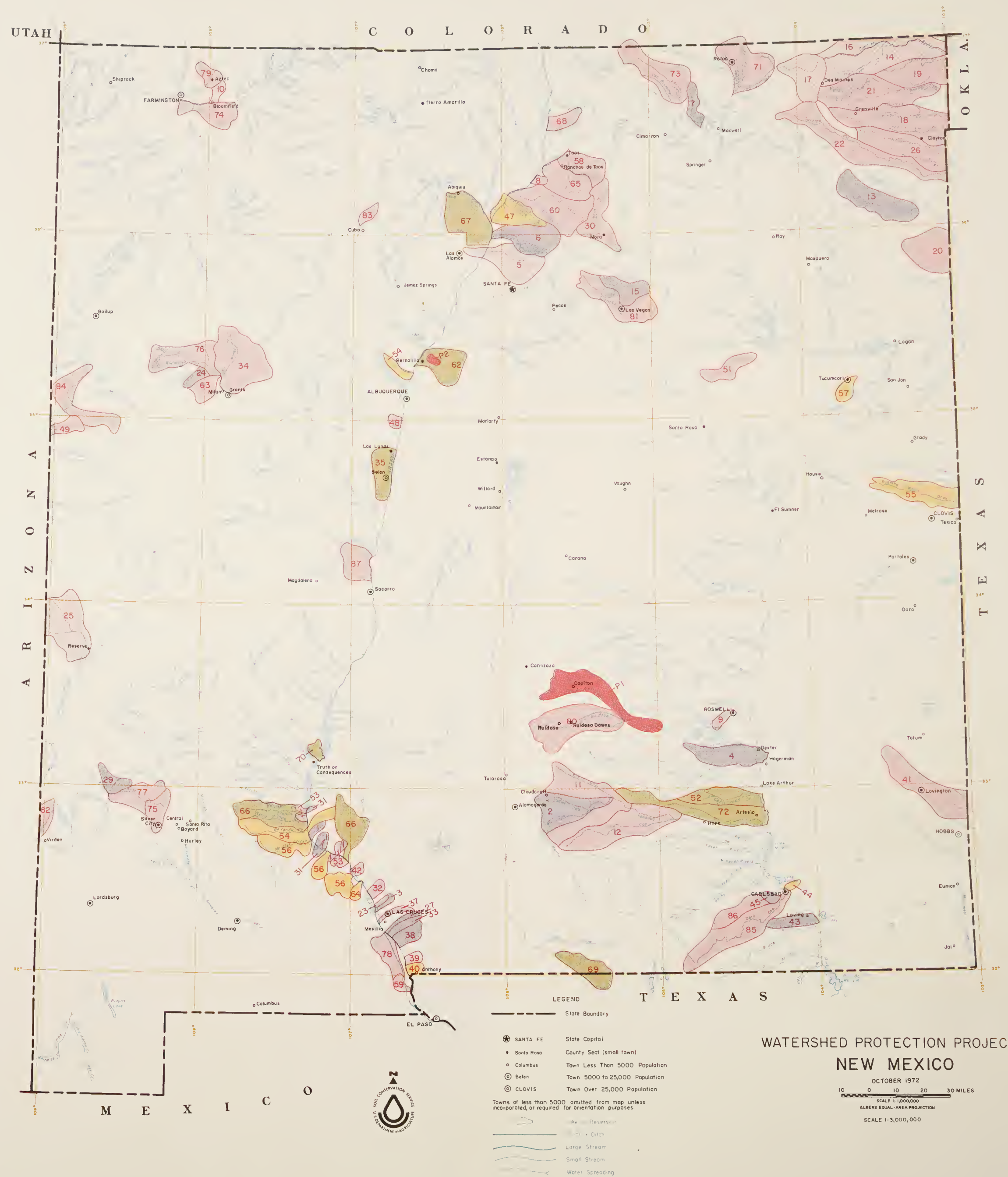
NO.	1/	WATERSHED	COUNTY	AREA (ACRES)	APPLICATION		REMARKS
					APPROVED BY	STATE ENGINEER	
8		Arroyo Grande	Taos	9,080		4-55	
12		Lower Rio Penasco	Otero-Eddy	189,310		3-55	
18		Cieneguilla Creek	Union	248,317		10-56	
19		Carrizozo Creek	Union,NM-Cimarron,OK	123,059		11-56	
20		Monia Creek	Union	139,776		11-56	
21		Corrumpa Creek	Union	249,000		2-57	
26		Perico Creek	Union	195,200		6-57	
37		North Alameda	Dona Ana	9,330		7-58	
51		Garita Creek	San Miguel-Guadalupe	50,000		11-60	
68		San Cristobal	Taos	11,040		7-63	
73		Vermejo River	Colfax	225,555		10-64	
77		Bear Creek	Grant	106,240		6-65	
85		Dark Canyon	Eddy-Otero	237,440		11-69	
86		McKitterick Draw	Eddy	53,120		11-69	
28		Turley-Deerman	Dona Ana	2,040		9-57	Appl. withdrawn-comb. #59
TOTAL: Projects - 15				1,940,507			

1/ Number assigned by SCS



LEGEND		
P1	Upper Rio Hondo Tribs. (Pilot)	
P2	Sandia Mountain Tribs. (Pilot)	
P. L. 566 WATERSHEDS		
No.	Watershed	Status
1.	Hatch Valley Arroyos	E
2.	Upper Rio Penasco	E
3.	Dona Ana Arroyo	E
4.	Zuber Draw	E
5.	Pojoaque Creek	C
6.	Santa Cruz River	E
7.	Saltpeter Creek	E
8.	Arroyo Grande	A
9.	North Spring River	A
10.	Bloomfield Arroyo	C
11.	Middle Rio Penasco	A
12.	Lower Rio Penasco	A
13.	Tramperos Creek	E
14.	South Dry Cimarron	C
15.	Pecos Arroyo	E
16.	North Dry Cimarron	C
17.	Upper Dry Cimarron	C
18.	Cieneguilla Creek	A
19.	Corriza Creek	A
20.	Monio Creek	A
21.	Corrupa Creek	A
22.	Corriza Creek	A
23.	Alvillar Arroyos	A
24.	Prop Canyon & Tribs.	E
25.	Upper Frisco	C
26.	Perico Creek	A
27.	Tortugas Arroyo	E
28.	Turley-Deerman (Combined with No. 59)	
29.	Upper Gila Valley Arroyos No. I	E
30.	Upper Mora River	A
31.	Caballo Arroyos	E
32.	Leasburg Arroyos	A
33.	Fillmore Arroyos	E
34.	San Mateo-Grants Canyon	A
35.	Belen-Las Lunas	B
36.	Lemitar-Paludera (Combined with No. 87)	
37.	North Alameda Arroyo	A
38.	Apache-Brazito Mesquite	E
39.	Louson Breedlove	C
40.	Anthony Arroyo	D
41.	Central Lea	A
42.	Gary-Windor-Haynor Arroyos	A
43.	Cass Draw	E
44.	Avalon-Alacran	D
45.	Hackberry Draw	F
46.	Alamo Canyon	A
47.	Sebastian Martin-Black Mesa	D
48.	Pajarito Arroyos	A
49.	Ojo Caliente	A
50.	Eagle Creek (Combined with No. 80)	
51.	Gorito Creek	A
52.	Cottonwood-Walnut Creek	B
53.	Upper Valley Arroyos	A
54.	Corrales Arroyos	D
55.	Running Water Draw (Tex.)	D
56.	Crow and Broad Canyon and Placitas Arroyo	D
57.	Tucuman Draw	D
58.	Taos Creek (Applic. withdrawn)	A
59.	La Union Arroyos	A
60.	Embudo River	A
61.	Corriza Creek (Applic. withdrawn) Combined with No. 80	
62.	Sandias Watershed Project	B
63.	Pole-Zuni Canyons	A
64.	Sibley, Green, Jaralosa and Candler Arroyos	D
65.	Little Rio Grande	A
66.	Trujillo, Mantoya, Tierra Blanca and Rincon Arroyos	B
67.	Espanola-Rio Chama	B
68.	San Cristobal	A
69.	Cornudas, North Draws (Tex.)	B
70.	T or C - Williamsburg	B
71.	Chico Rico	A
72.	Eagle-Tumbleweed Draws	B
73.	Vermejo River	A
74.	Hammond Conservancy Dist	A
75.	Silver City Watershed	A
76.	Rio San Jose	A
77.	Bear Creek	A
78.	San Miguel Arroyos	A
79.	Hampton, Aztec, School, Williams and Estes Arroyos	A
80.	Ruidoso	A
81.	Gallinas River	A
82.	Virden-Duncan Valley	A
83.	Rito Leche-Nacimiento	A
84.	Zuni	B
85.	Dark Canyon	A
86.	McKittrick Draw	A
87.	Midway	A

LEGEND	
P1 & P2	Pilot Projects (completed)
A	Watershed Applications
B	Watersheds Authorized for Planning
C	Planning Discontinued
D	Watersheds Authorized for Operations
E	Completed Watershed Projects



USGS National Atlas 1:1,000,000 Albers Equal-Area projection (1967) used as source for base map and adopted for SCS use.





